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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/628,162

07/28/2003

Sander L. Gierkink

S. GIERKINK 2-2

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02/27/2006

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EXAMINER

HANNON, CHRISTIAN A

ART UNIT

PAPER NUMBER

2685

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/628,162	<b>Applicant(s)</b> GIERKINK ET AL.	
	<b>Examiner</b> Christian A. Hannon	<b>Art Unit</b> 2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **264** of **[0036]**. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitation "The method as recited in claim 1" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim. It is believed by the examiner that the applicant wished to stem claim 14 from the independent method claim of claim 8, and will be examined thusly.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al (US 5,884,154), herein Sano.

Regarding claims 1 & 8, Sano teaches a phase error suppressor for use with a plurality of transistors having a common source coupled to a current generator (Figure 1, Items Q1,Q2,Q3,Q4,15 & 25; Sano) and configured to receive signals at a frequency, comprising, an inductor (Figure 1, Item 15 & 19; Both with inductance value LE; Sano) resonating proportionally to said frequency with a first capacitance associated with said plurality of transistors. It is inherent that the plurality of transistors have a first capacitance associated with them, as Sano describes the degenerative feedback provided by the inductors (Figure 1, Items 15 & 19; Sano) is in order to squelch the noise and provide more linearity to the circuit (Column 4, Lines 3-5, 10-12 and 23-44; Sano). However Sano teaches the use of two same valued (Figure 1, Items 15 & 19;

Sano) inductors for each path in the Sano circuit of Figure 1. Since both paths go through the same inductance it would be obvious to remove one of the inductances in order to lessen circuit components, doing so will not effect the overall circuit output. Furthermore since claim 8 is merely a method recitation of claim 1, it is rejected on the same grounds.

In regards to claims 2 & 9, Sano teaches the phase-error suppressor of claim 1 wherein said plurality of transistors and said current generator form a portion of a system selected from a group consisting of a quadrature oscillator buffer (Figure 1, Items 51, 53, VDD, Q1-4, 41, 43, 45, 47, 15, 19 & 25; Sano), a quadrature oscillator (Column 3, Lines 35-39; Sano) and a quadrature mixer (Column 3, Lines 25-27; Sano). Furthermore since claim 9 is merely a method recitation of claim 2, it is rejected on the same grounds.

With regards to claims 3 & 10, Sano teaches the phase error suppressor of claim 1 wherein said inductor and said first capacitance resonate at twice said frequency (Column 4, Lines 3-5, 10-12 and 23-44; Sano). Furthermore since claim 10 is merely a method recitation of claim 3, it is rejected on the same grounds.

Regarding claims 4 & 11, Sano teaches the phase error suppressor of claim 1 wherein said first capacitance is dominated by a base-to-emitter capacitance of at least one of said plurality of transistors (Column 3, Lines 39-45; Sano). Furthermore since claim 11 is merely a method recitation of claim 4, it is rejected on the same grounds.

In regards to claims 6 & 13, Sano teaches the phase error suppressor of claim 1 wherein said frequency is at least three GHz (Column 5, Lines 43-46; Sano). While

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Sano mentions in particular an example of an operating frequency of 880MHZ in one example (Column 5, Lines 9-19), he does not limit the operating frequency to this particular specific frequency and goes on to teach the use of the circuit in a wireless telephone, obvious to one of ordinary skill in the art, which could operate at at least three GHz. Furthermore since claim 13 is merely a method recitation of claim 6, it is rejected on the same grounds.

With regards to claims 7 & 14, Sano teaches the phase error suppressor of claim 1 where said signals are four periodic local oscillator signals having a 90 degree phase difference (Column 2, Lines 33-35; Sano). Furthermore since claim 14 is merely a method recitation of claim 7, it is rejected on the same grounds.

Regarding claims 15-21, therein recited are the limitations previously disclosed in apparatus and method claims 1-7 & 8-14, respectively, with the addition that the circuitry details are now made to comprise within an image-rejecting down-converter for use with a RF receiver. Sano teaches all the limitations as previously rejected above in addition to the circuit being used within an image-rejecting down-converter for use with an RF receiver (Column 5, Lines 43-46; Sano).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Belot (US 6,639,468) discloses a Low noise amplifier, in particular for a cellular mobile telephone.

Komurasaki et al (US 6,472,925) disclose a mixer circuit with negative feedback filtering.

Prentice (US 6,344,762) discloses a bias circuit for a low voltage differential circuit.

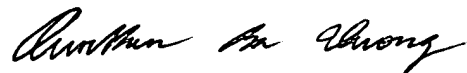
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christian A. Hannon  
February 15, 2006



02/17/06

QUOCHIEN B. VUONG  
PRIMARY EXAMINER